Ontario fish and wildlife Review

Vol. 15, No. 1, 1976

Guilt is a theme this issue. Who consumes the natural environment? Everybody. Anglers, hunters, berry pickers, campers, naturalists, and some well meaning folks who just think they're naturalists. Al Stewart and Al Wainio are doing their bit to help.

On the science side, Dennis Voigt continues the fascinating research story that centres on the red fox, and our cover proves he has taken his subject to heart. For the American goldfinch (back cover), we are indebted to Dr. Donald Gunn of Oakville.

Bob Alison turns toponymist with a nifty on place names of Indian origin. Carsten Jorgensen defends and praises the common sucker. And Peter Lee salutes wild rice.

Ontario
fish and wildlife
Review

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The goal of the Ministry of Natural Resources is to provide opportunities for outdoor recreation and resource development for the continuous social and economic benefit of the people of Ontario, and to administer, protect and conserve public lands and waters.

Ontario

Ministry of
Natural
Resources

Hon. Leo Bernier
Minister

Dr. J. K. Reynolds
Deputy Minister

EDITORIAL

DEATH IN CAMERA

A popular naturalist magazine recently carried on its back cover an excellent photograph of an American bittern feeding its young on the nest. It was a spectacular picture for bird lovers but its appeal to some readers was grievously diminished by the cut cattails clearly visible in the foreground. The vegetation was cut back, it is assumed, to give the photographer an unobstructed view of the nest.

What about the young bitterns? The destruction of their cover exposed them to weather and predators and placed their survival in jeopardy. If they perished later because of the effects of their moment of publicity, these birds were killed by a "non-consumptive" user just as certainly as if shot by an indiscriminate and "consumptive" shooter.

Non-consumptive users are numerous and often deadly.

All readers will have seen motion films and television programs in which wild creatures and their cover are abused for the sake of exciting action or beautiful pictures. We are often shown the most graceful mammals in motion, all running for their lives. It must be said that many viewers are so entranced with the moving film that they fail to recognize the destruction and trauma caused by the film makers.

Plant photographers have destructive habits too. They kneel or sprawl or otherwise flatten several square feet of delicate vegetation to capture the image of one wildflower — and often pride themselves on *not picking* plants or flowers.

The people who watch bird-watchers have reported that, to some keen bird-listers, a new bird on the list is worth many plants trampled into the ground. On Point Pelee, for example, bird-watchers gather in large numbers for the spring migrations, and ecologists have been appalled at the amount of vegetation they destroy.

On the other hand, many users of the outdoors try to be careful, and the damage they do is relatively slight because of their philosophical approach to nature. Nevertheless, all users of the natural environment consume the resource either deliberately or unwittingly. There is no such thing as a non-consumptive user.

As a start toward a better understanding of nature, we should refrain from using the terms, consumptive and non-consumptive. They are artificial and meaningless distinctions.

Second. We must sharpen our outdoor ethics if we are to behave better in the outdoors. We must recognize that non-human nature has rights, too, and value wildlife for its own sake.

INTROSPECT

A personal opinion
not necessarily endorsed by
the Ministry of Natural Resources

THE CRUELTY OF KINDNESS

by A. A. Wainio
Biologist, Maple District

"Aaaaaaaw, those poor ducks."

This is a common remark made by people while strolling or driving along the Toronto waterfront in winter when they see hundreds of mallards huddled together on a snowy bank or crowded in some ice-encircled pool.

Well-meaning individuals, clubs and agencies spread out large handouts of bread for the ducks during the cold months. It is misguided kindness — touching but misguided.

Misguided in what way? Migratory patterns are disrupted and migrating ducks are seduced into remaining in Toronto. The genetic pool is diluted. Crowded conditions cause stress. Diseases become rampant. All in the name of kindness.

In the 1920s there were no overwintering mallards along the Toronto waterfront, but as a result of small releases in the early 1930s the Toronto winter flock now numbers 5,000 and is still increasing.

These ducks do not belong in Toronto harbour where "kind" people are turning them into welfare bums. They should be south in the wetlands of Arkansas or in the coastline bays of Maryland. They are not naturally residents of Ontario.

This expanding duck population is highly susceptible to diseases and stresses and under continuous harrassment. As recently as last summer, a disease infected the ducks along the shoreline and many died.

To see ducks scrambling for white bread and potato chips is an engaging sight — for some. To others it is disgusting. The nutritional value of the handouts is dubious. In the wetlands of Arkansas, the ducks would be eating more nutritious food.

The waterfront ducks are breeding with domesticated ducks from the Toronto Island farm. Weak and unhealthy birds are surviving, fostering weaker generations. In the wild, the sick and weak would die. When Nature kills the ducks that have flaunted the traditions necessary for survival, she is being kind — kind in a realistic way.

These ducks don't need special care. What they need are marshes, swamps and wetlands of all kinds to nest and feed. And yet it is these areas, so vital to ducks, that man is gobbling up. We feed them with one hand and destroy their homes with the other. How kind!

The life patterns of animals have been established to ensure survival, and the kindest approach man can take is to encourage these patterns, not break them.

Flights of ducks in the spring and fall over Ontario's lakes and rivers is a tradition we do not want to lose, and it is one we all love and thrill to. We should strive to foster and preserve wildlife traditions. Our kindness and wisdom would blend with these traditions.

By keeping the ducks here, certain people are perverting the ways of waterfowl and revealing their ignorance of their ways and needs. The migratory pattern, essential for the survival of the species, is still necessary.

The Beatles' song *Let It Be,* so often applied to endangered animal species, is also appropriate to the common animals whose life patterns have been disrupted by well-meaning people. Let them be.

A man who admitted shooting an American bald eagle was fined $5,000. — *News report from Grand Rapids. Mich.*

A DEAD TREE IS FULL OF LIFE

One day last summer, a man called at my office to ask if he might cut down a large dead tree on Crown land close to his summer cottage. He said it was unsightly and of no value except for fire wood. I advised him that dead trees are very attractive to wood-eating insects, and many other insects find the loose bark and crevices good places to hide during daylight or to deposit their eggs. This in turn invites insect-eating birds, so the tree virtually becomes a feeding station. All too often, ice fishermen or campers will cut down a dead tree on a lake shore for a few blocks of wood, and in so doing deprive wild creatures of the most valuable tree in the area. As my visitior was leaving, I asked if he still wanted to cut the tree near his cottage. "No thanks," he said. "I'll take another look at that old tree, from a different point of view."

— *Bernard Hughes, Kirkland Lake*

Naturalists and hunters hear some basic facts of wildlife management.

"No form of killing can ever be jusified."

"I hunt ducks in the fall but I worry about their survival all year round."

BIRDS OF A FEATHER

Report and Photos by A. J. Stewart
Fish and Wildlife Supervisor, Huronia District

ON a rainy Saturday morning in late September, a group of conservation-minded people converged on Tiny Marsh headquarters just north of Elmvale, a small community nine miles northeast of Wasaga Beach. Tiny Marsh is one of 40 Wildlife Management Areas in southern Ontario managed by the Ministry of Natural Resources.

The topic of the day was "better understanding between hunters and naturalists." The participants were a mixed lot — a librarian, a writer, a city planner, a factory worker, a doctor, a schoolteacher — in fact just about every facet of the local community was represented. Ages ranged from retirees to a 17-year-old student. This mixture of about 30 individuals represented two groups with a similar goal — wildlife conservation — but whose philosophies on the management of wildlife frequently differ. The objective of the meeting was to enable their differences to be aired, discussed and, hopefully, understood.

The catalyst for the gathering was the Ministry's fish and wildlife staff of Huronia District. The assistance and involvement of private citizens is vital to fish and wildlife managers if 'progress' and 'development' are to be tempered with environmental concern and 'common sense'. The efforts and funds of sportsmen and naturalists should not be wasted in squabbling among themselves while wildlife habitat is being bulldozed, drained, paved and developed.

The biological question of regulated hunting and trapping has been answered time and time again. It does not harm wildlife populations and in many instances can be beneficial to their welfare as attested by the game and fur species which are healthy. Wildlife managers, hunters and trappers have long worked to conserve these species and their habitats. In fact it is non-harvested species, such as the bald eagle, peregrine falcon, blue racer and timber rattlesnake, whose habitat has been allowed to deteriorate to the point that they have been declared endangered.

Unlike the biological question, the moral question of killing a bird or mammal or catching a fish is far from resolved and occupies the minds of many concerned citizens. The moral question very often becomes confused with the biological question, resulting in emotional crusades designed to impose personal beliefs on others. For every action there is a reaction, and much-needed conservation energy and funds are wasted in hunter-naturalist conflict while all around us wildlife habitat is being destroyed. The marsh must be saved before we argue about its use!

The meeting at Tiny Marsh commenced with a talk on the role of the Ministry of Natural Resources in wildlife management. Concerned, but uninformed, participants were surprised to learn that conservation officers, biologists, and scientists are involved with wildlife on a daily basis. The complex licensing systems, the numerous acts and regulations, the co-operation at provincial, federal and international levels, the numerous research and monitoring programs that are continually going on within fish and wildlife agencies — these were not well understood.

The topic of hunting was then broached. An impressive film, A Question of Hunting, was shown, the intention being to focus attention on moral and biological questions.

The discussion that followed was hesitant, restrained and only a tentative probing of issues. Both 'sides' found that there was more agreement than disagreement in philosophies. There was no clear-cut enemy to fight against. The 'hunting issue' assumed less importance. The need for co-operation and unity became more important.

Alex Smith, left, and Al Stewart lead informal discussion.

The remainder of the meeting related to wildlife habitat with a number of guided tours and discussion on the role of different types of habitat in wildlife production and preservation. The day ended with a demonstration of bird dog retrieving.

Accomplishments of the day are difficult to determine. No doubt those who knew nothing about hunters discovered that most are concerned, dedicated conservationists with a long list of achievements in conservation. Hunters discovered that the 'dicky-bird' watchers are knowledgeable, concerned outdoorsmen. Some members of both groups discovered there are trained professionals who share their concerns and devote their lives to wildlife.

A questionnaire which circulated after the workshop indicated that all participants became more aware of other people's conservation interests. Generally, the hunter professed a greater degree of respect for the naturalists's side. Naturalists showed more respect for the hunter's role but did not admit to any greater acceptance of hunting. All participants indicated an awareness of the need to work together. Some of their comments were as follows.

"How can you justify the suffering caused by killing?"

"I respect the animals I hunt."

"I felt true opinions were withheld for fear of losing the friendly atmosphere."

"How do you reach the slob hunters or naturalists who litter — it is the already convinced who come to the workshops."

"I would sincerely like to learn why our game laws are not more severely enforced."

"I felt that it was more a naturalist education day than anything."

"Both a 'hunter' and 'naturalist' have somewhat common goals — preservation and creation of habitat."

"I hunt but I'm also a damn good naturalist — in fact I don't see how the two are separate."

The united effort of all conservationists is needed to reduce the loss of wildlife habitat in Ontario. Perhaps the workshop helped in a small way to unite the ranks of two important and powerful conservation groups. Only time will tell.

There's no mistaking a sucker. — Photos by F. P. Maher

FISHING FOR FLAVOR — SUCKER

by C. R. Jorgensen
Biologist, Lake Nipissing Fisheries Assessment Unit

OF the several species of sucker in Ontario, the white sucker, *Catostomus commersoni,* is the most common. It has an elongated and robust body with a sucker-like mouth overhung by the snout and directed downwards. The lips are thick with the upper one thinner than the lower. The fins are large and dusky. The back is dark, almost black, shading to silvery on the sides.

Suckers are bottom feeders and eat such food items as midge fly larvae, caddis fly larvae and molluscs. Water-fleas, tiny crustaceans, constitute 60 to 90 per cent of the food of many individuals in summer. Heavy feeding is usually restricted to sunrise and sunset when they move into shallow water but they remain moderately active during the day.

Because suckers spawn in spring, often in proximity with spawning yellow pickerel (walleye), they are accused of eating the latter's eggs. The truth is that there is no evidence that they feed on walleye eggs at this time.

Angling for suckers with light tackle is an interesting pastime. The simple gear consists of pole, line, light leader, split shot sinker and a No. 6 or 8 hook. Anglers may use a variety of baits such as grubs, worms, doughballs, small spinners and wet flies.

White suckers are most vulnerable when they concentrate in spawning streams. In northern areas they may be taken with a spear during the day in April and May, and in many areas with a dip-net during daylight hours in March, April and May. Check your local fishing regulations.

In eastern North America, the white sucker is extensively used as food and is highly esteemed. The flesh of fish taken in the spring is bony but palatable. It may be prepared for use in many different ways — by smoking, salting and canning. Several recipes for cooking which will please the most discriminating have been developed. The flesh is white, flaky and sweet and makes good soups and chowders. If only the upper muscle masses are used almost all of the bones are avoided. When taken in cold water in the spring, it is tasty if fried in butter. It is as good as so-called prime fish when hot-smoked. Skinning and filleting will ready this fish for most of the recipes.

THE SUCKER COOKERY

Sucker Fillets Baked in Barbecue Sauce

Soak fillets in:
1 cup milk
1 tsp. salt

Soak 5 minutes. Roll in bread crumbs. Place fillets in a greased casserole and pour the following ingredients over:

1 tbsp. oil
3 tbsp. grated onion
¾ cup catsup
¼ cup vinegar
2 tbsp. brown sugar
1 tsp. salt
¼ tsp. pepper
1 tbsp. Worcestershire sauce

Bake at 350° F. for 1 hour.

Kamabuko (Japanese Fish Cake)

1 lb. fillet of sucker
½ cup water
1 egg
2 tsp. cornstarch
2 tsp. sugar
1 tsp. salt
1 small carrot
2 green onions chopped fine

Put the fillet through a meat chopper twice. Add water and beat in a large bowl with beater. Add starch, sugar and eggs in order, beating well after each addition. Add salt at the very last for this makes the mixture quite firm. Add ¼ tsp. Accent for flavor. Add the finely chopped vegetables. Mix together and shape into patties. Deep fry.

Poachers and polluters are common thieves, stealing your resources. — W. H. Therriault, Cochrane.

NEW PUBLICATIONS

Ministry of Natural Resources. Mail orders must be accompanied by a cheque or money order payable to the Treasurer of Ontario.

FISH ONTARIO . . . See-at-a-glance information for anglers on important fish populations in 4,582 Ontario waters. Lakes and portions of lakes and streams are grouped by regions, listed alphabetically, and located by district or county, township, and degrees and minutes of latitude and longitude. The tabulation shows the presence or absence of lake trout, brook trout, rainbow trout, brown trout, yellow pickerel (walleye), northern pike, maskinonge, smallmouth bass, largemouth bass, yellow perch and lake whitefish. 160 pp. $1.00

ABOUT BAIT-FISH IN ONTARIO by R. G. Wallace . . . Descriptions and illustrations (21 color plates) of major bait species; tested techniques for care and handling; and symptoms and treatments for common diseases. 60 pp. $2.00.

FISHERIES MAPS, April, 1976 . . . 514 surveyed lakes.

THE WHITE-TAILED DEER IN ONTARIO by H. G. Cumming, F. A. Walden (revised). $0.50.

THE MOOSE IN ONTARIO by H. G. Cumming (revised). $0.50.

THE BEAVER IN ONTARIO by Milan Novak (revised). $0.50.

THE RUFFED GROUSE IN ONTARIO by Blair Dawson (revised). $0.50.

THE LESLIE M. FROST NATURAL RESOURCES CENTRE (small folder).

Ear-tagging the foxes to be vaccinated and radio-collared.

RECENT RESEARCH ON THE RED FOX

First of a Series on Ontario's Wild Canids

Report by D. R. Voigt
Biologist, Fish and Wildlife Research Branch

THE wild canids of Ontario are a varied group of predators, important economically and socially. They are tremendously adaptable and interesting and their prey ranges from mice to moose. Two or more of the canids are found almost everywhere in the Province and the three most common are the red fox (*Vulpes vulpes*), coyote (*Canis latrans*) and timber wolf (*Canis lupus*). The grey fox (*Urocyon cinereoargenteus*) and Arctic fox (*Alopex lagopus*) also occur.

The red fox, weighing less than 12 pounds usually, is the smallest of the common canids but it is the one most often seen and best known. Almost everyone has had some experience with red foxes through sightings, rabies outbreaks, hunting, trapping, lost chickens, fur coats or children's storybooks. In the past, the fox was probably thought of most often as a chicken thief or the quarry of hounds and hunters, but today it is best known for its role in rabies epidemics.

Currently the fox is the subject of some intriguing research in our efforts to understand and control rabies (see Rabies Control: Experiments in Behavioural Engineering, Spring, 1975). Even the fox is not immune to electronic bugging. By tracking foxes carrying radio-transmitter collars, a more thorough understanding of fox populations, movements and behavior is now possible.

Red foxes are less common than they were before the invasion of rabies in the late 1950s but they are more numerous than most people realize.

Last summer we tried to discover just how many foxes lived in a selected area. We took advantage of the foxes' fondness for groundhogs and sewed small radio transmitters into dead groundhogs just as a policeman would bug a briefcase containing a ransom payment. After the instrumented groundhogs were placed in likely fox country, adult foxes were quick to find this bonus food supply and carry it back to their pups. The next day we simply followed the radio signals directly to the fox dens.

Other dens were found through ground tracking and the returns from a questionnaire mailed to farmers. This was in an area where foxes were seldom seen and where most local residents believed that few existed.

By early summer, our estimates showed about one fox den per three square miles. Some dens were within one half-mile of each other. We never saw more than five pups at one den but long-term studies have shown that vixens give birth to from six to eight pups. Thus, the area probably had more than two foxes per square mile, including pups. No doubt some pups die in early life but we know that in the fall more than 60 per cent of foxes are young-of-the-year.

The next step in prying into the ecology of foxes was to live-trap several foxes from selected families. An adult male and female and ten pups were vaccinated against rabies, distemper and hepatitis to ensure they would not act as carriers. Then they were fitted with radio-collars and ear tags and released.

We wanted to learn how far foxes travel, how much families interact, and what potential there is for involvement with other species such as raccoon, skunk and coyote. Subsequently, we put radio collars on these three species.

Studies in the United States indicated that foxes leave the family area in the fall and that a few travel great distances, up to 240 miles, before settling on a new home range. This could explain the fast spread of rabies in new areas.

In southern Ontario, fox populations build to a peak every three years and then crash because of rabies outbreaks. The outbreaks increase the probability of the transfer of rabies from wildlife to livestock, domestic pets and humans.

During the summer we found fox pups soon exercised a degree of independence. They usually travelled the same area within one half-mile of the den but rarely were two seen together, and more often they were several hundred yards apart. Adults moved greater distances, as much as two miles from the den, and sometimes stayed away from the den for one or two days. By mid-August, the pups began to move into new areas but they were still within a mile of the den.

During a five-day period in August, we tracked the foxes continuously, day and night, and found they were active about 60 per cent of the time. Their movement usually started about two hours before sunset and continued until after sunrise, but a surprising amount of their activity occurred during the daytime. By this time some foxes had occupied several dens and the pups from one family were split up into dens more than two miles apart.

In late August the pups became extremely restless and some left their summer areas for two or three days at a time, occasionally going as far as three miles. Some were recorded moving through areas occupied by other families.

At this time there was an outbreak of rabies in a family that had not been radio-collared and vaccinated. Fortunately, some members of the three adjacent families had been collared and vaccinated, and "our" foxes were not affected. The outbreak seemed to die out but it showed clearly how the limited summer movement of foxes could spread the deadly virus to adjacent families and lead to the winter rabies outbreaks common in Ontario.

Subsequently we recorded the activity of radio-collared skunk, raccoon and coyote as well as fox and found that all four species frequented the same areas at the same time. In the preceding winter, studies had shown that raccoons and skunks use many ground dens where contact with foxes is possible.

In September, the fox pups began to leave the family area and sometimes did not return. In the dispersal to search for new territories, some stayed away for more than three months and probably permanently. Others travelled more than six miles from the den in a day or two and then returned home but only to set off again. One male pup got 15 miles away before poking his way home, and then he took off in the opposite direction.

The young foxes dispersed in most compass directions and so it was interesting to find two or three ending up in the same place — sometimes where other foxes already lived. The pups had minimum home ranges of about two square miles before dispersal, but by November their new home

Fortunate foxes await vaccination.

ranges averaged about four square miles. This is close to the size of the area covered by an adult fox.

By late November, dispersal of the young foxes from the home den averaged more than four miles. So far, none of the foxes we tracked has travelled the great distances reported in some U.S.A. studies. However, they have helped us to test new baits for our rabies control research.

We hope they will also help us to verify a method of censusing foxes by aerial surveys of fox trails in winter. Yes, despite the opinions of skeptics, you can see fox tracks from the air — if you fly low enough and soon after a snowfall. A count of the number of tracks seen per mile is used as an index of fox density.

We are finding that much remains to be learned about fox ecology but today's techniques are a far cry from the binoculars and notebook of the past. Better research today means more capable management tomorrow.

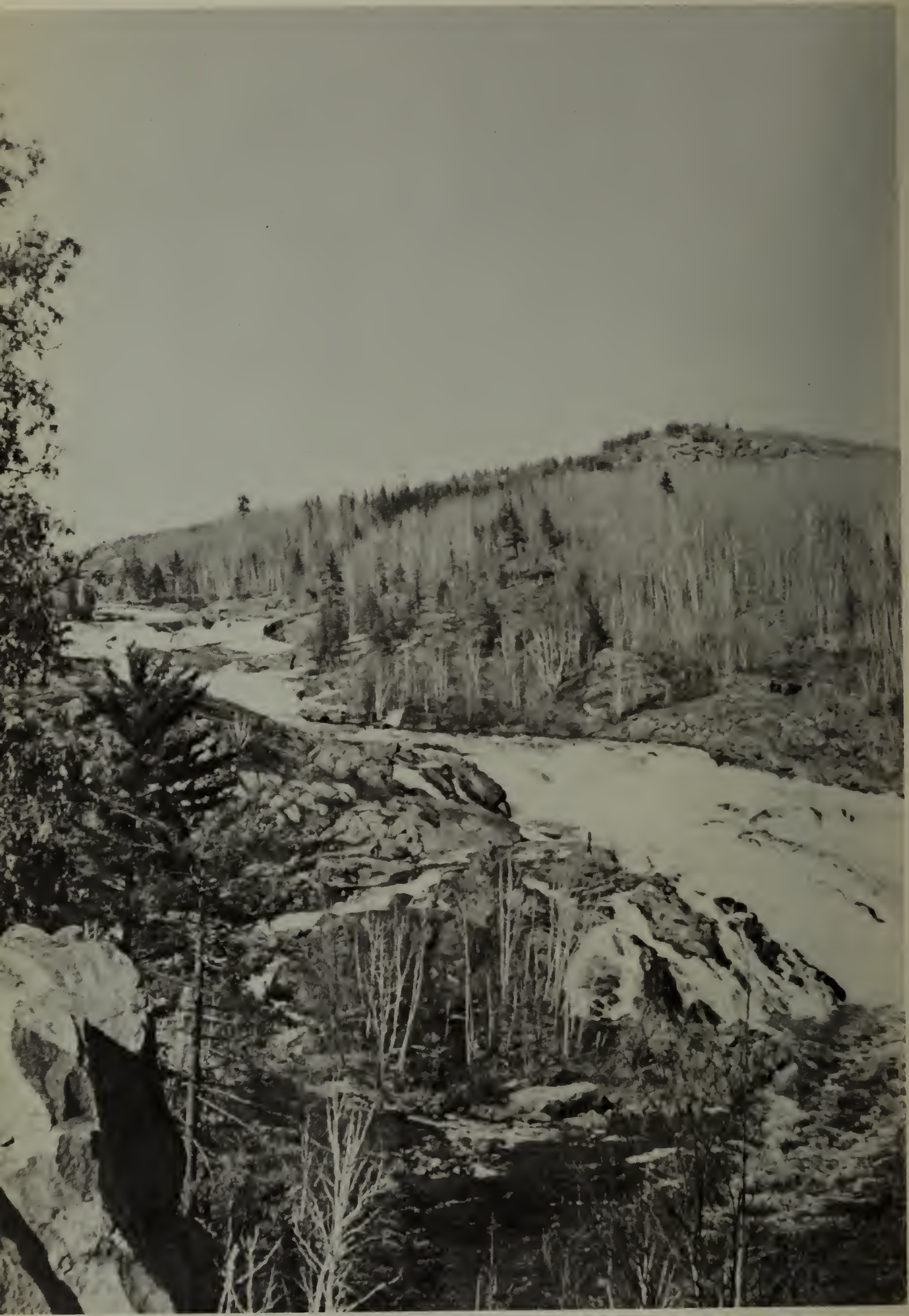
Field receiving station, tuned to radios in fox collars.

HOW MANY FOXE

How many in spring? How m
travel? Research proceeds in fo
amples of typical habitat. The
den, and below a pup pops up
The opportunistic adult, below,
through the courtesy of the rese
Earle prepares to vaccinate a fo
Ian Watt is about to release 1
tagged and radio-collared. —*Ph*

R SQUARE MILE?

all? How far and fast do they
y, represented here by three ex-
ft shows the entrance to a fox
at Dennis Voigt, photographer.
ing off with a gratis groundhog
w (right) who bugged it. Barry
t rabies, distemper and hepatitis.
ds of mobility, vaccinated, ear-
D. H. Johnston and D. R. Voigt.



Onaping Falls. Onaping means flat place. — Photo by K. M. Andresen

Temagami or "Deep Lake". — Photo by Ted Jenkins

INDIAN GEOGRAPHICAL NAMES IN ONTARIO

*by R. M. Alison**
Waterfowl Biologist, Wildlife Branch

BEFORE the settlement of Ontario by the white man, resident Indians relied almost exclusively on hunting and fishing to provide their food, especially in the areas where the cultivation of corn was not possible. There are accounts among the documents written by early Jesuits of Crees and Ojibways starving to death in winters of wildlife and fish scarcity.

It is not surprising that Indians, in naming specific geographical locations, often used the names of mammals, birds and fish found in the vicinity. In many instances, the Indian names are an aid to the understanding of former animal distribution. For example, the presence of the passenger pigeon is indicated by *omemee,* the Ojibway word retained in place names such as Mimico and Omemee.

In the seventeenth century, the Huron, Neutral and Tobacco nations occupied Ontario south of Matchedash Bay and many geographical names in that part of the Province originated with these people. Iroquois incursions about 1650 drove these tribes from Ontario (Hunt, 1940) and they either settled elsewhere or were absorbed by other groups.

Some of the Iroquois bands inhabited parts of Ontario in the seventeenth century (e.g. Mohawks at the Bay of Quinte), but the majority settled in Ontario during the American Revolution.

The Delaware were driven from Ohio in 1793 and eventually settled along the Thames River. The Potawatomi entered Ontario about 1842 after having been driven from Indiana. Virtually all of the remaining Algonkian-speaking people inhabited Ontario prior to the seventeenth century.

In Ontario, the Algonkian linguistic group includes Ojibway, Algonquin, Cree, Delaware, Potawatomi and Ottawa (and formerly Nipissing, Alumette and many others) whereas the Iroquoian group includes Mohawk,

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**R. M. Alison is the author of Mammal and Bird Names in the Indian Languages of Ontario, a booklet published by the Ministry of Natural Resources. It lists mammal and bird names in the Cree, Ojibway, Huron, Seneca and Mohawk languages.*

Oneida, Onondaga, Cayuga, Seneca and Tuscorora (and formerly Huron and others). The Iroquoian bands formerly inhabited parts of southern Ontario whereas the Algonkian bands occupied central and northern Ontario. Tribal migrations occurred frequently. Thus, although Iroquoian geographic names tend to be restricted to southern Ontario, this is not always the case.

Each linguistic group comprises a number of sub-groups speaking related dialects, many of which are mutually intelligible. For example, among the Cree of northern Ontario, there are at least three spoken dialects, wherein Roman Catholic Cree (e.g. Fort Albany) use an n-dialect and Anglican Cree (e.g. Moosonee) use an l-dialect (Michelson, 1939). East of Hannah Bay, the original l-dialect is replaced by a y-dialect (e.g. Rupert's House, Eastmain, Fort George).

In the Indian languages every place name related the locality to which it was affixed. The description was frequently topographical but sometimes it was historical or indicated natural products, animals or position relative to a previously identified location. The same name was frequently given to more than one location, but such locations were generally not so near as to cause confusion.

Many Indian geographical names, after their adoption by English-speaking or French-speaking colonists, became virtually meaningless. Their character was lost due to the transfer to a different language and a change in pronunciation. Nearly all the Indian names that remain have been mutilated and, in many instances, it is often difficult to detect the original name or its implications from the existing modern word. Some names have been separated from the localities to which they originally belonged and, in other instances, inapt names have been assigned to locations. A mountain may receive the name of a river, or a point of land that of a rock or an animal.

It is interesting to distinguish the original meanings of the Indian geographic names which still exist in Ontario. It is possible to derive knowledge of past animal distribution, forest distribution and river character from specific names. Almost invariably, the words are comprised of (a) two distinct elements (noun and adjective) with or without a suffix, (b) one element (noun) usually with a suffix, or (c) verbal nouns denoting a place where the action is performed. Many of the verbal nouns may be shown to belong to one of the two preceding classes.

NOUN-ADJECTIVE CLASS

Of the names in this class, many denote land, water, lake, river, rock, island or hill.

Scene at mouth of Michipicoten which means big shattering.

Kakabeka or "Steep Rock" Falls. — Photo by Ted Jenkins

Akimiski Island in James Bay includes the Cree *aski* or Ojibway *ahki* (land) and denotes land beyond (the water); and *Minaki* means blueberry land.

The Algonkian word for river, *sepi, sepu* or *sipi,* is included in many place names. Thus, *Kitchi-sipi* means greatest river (i.e. St. Lawrence); Abitibi comes from *Abitipi* and means half-way river; *Essosipi* is a river of oysters; *Missinabi* means marked by a river; and Nipigon is a troubled river.

The word *pawt* (falls) is derived from a root meaning to make a loud noise. Thus, *Pawating* means place of the falls (now Sault Ste. Marie); *nippe* or *nippi* denotes slow-moving water as where a river widens into a lake; *Missi-nippi* (now Missinabe) means great water; and *Nipissing* means at the small lake.

The Algonkian *gami, gomi* or *gummee* denotes lake or water at rest. Thus, *Kitchi-gami* means greatest lake (i.e. Lake Superior); *Temo-gami* means deep lake; *Keno-gami* means long lake; *Keso-gami* means warm lake; *Mitchi-gami* means large lake (i.e. Michigan); *Kawagami* means scarcely a lake; *Mata-gami* means noise of water; and *Temis-kam-ing* means place of deep water.

The Algonkian *assini* indicates stony and *Mistassini* means the great stone.

Minis or *ministik* denotes island. Thus, *Minis-ing* means place of islands and *Kaministiquia* means river of islands.

The Algonkian *ing* indicates a place. *Kapuskas-ing* means a place of branching or diverging; *Kebskwash-ing,* a place of slow walking; *Obashk-ing,* place of a channel; and *Onap-ing* means a flat place.

NOUN CLASS

To this class belong names formed from a single root word, with or without a suffix. The Algonkian *nai,* meaning point or corner, frequently occurs in association with noun roots. For example, *Neiachi* means point of land and *Sauk* denotes pouring out. Thus, *Missi-sauk* (i.e. Mississauga) means great outlet and *Saguenay* means grand discharge.

Other names which comprise noun roots include the following: *Chicago,* meaning place of skunks; *Erie,* nation of cats; *Kakabeka,* steep rock; *Manitoulin,* place of the great spirit; *Mattawa,* place of noise; *Moose,* moose or elk; *Muskoka,* a belt; *Napanee,* flour; *Waubau-shene,* place of the hare; and *Wawa,* eggs.

VERB-NOUN CLASS

Participles and verbs are used frequently as place names although the distinction between noun and verb is less marked in Indian grammar than in English. Furthermore, personal and other names are frequently given to places. For example, *Couchiching* means emptying place; *Niagara,* making noise; *Ogoki,* joining to; and *Oshawa* means crossing.

GEOGRAPHICAL NAMES OF INDIAN ORIGIN

Place Names	*Meaning of Names in Indian Languages*
Abitibi	half-way river
Abiwin	permanent living place
Achigan	a bass
Agawa	hardly, scarcely
Ahmic	beaver
Akimiski	land beyond the water
Amik, Amisko	beaver
Amikougami	beaver river
Anjigaming, Anjigoma, Anjigomi	changing place
Atikokan	caribou bone
Atikomeg	whitefish
Atikwa	caribou are seen
Batchawana, Batchewaung	boiling up
Cataraqui	place of clay
Chebogomog	passing from end to end in a narrow lake
Cheepash	a small river
Chepakonge	emphasizes effort to pass through
Chicago	place of skunks
Chinguacousy	little pine
Conestoga	(Anglo-Saxon name for Susquehanna Indians)
Couchiching	emptying place
Erie	nation of cats
Eskakwa	rocks are seen
Esnagami, Esnagi	shell waters
Esnogaming	place of shells
Essosipi	river of oysters
Gananoque	place of residence
Kabaigon	a long time; closed
Kabakwa	one sees shallowness
Kabibonoka	long winter
Kabibwabik	powdered ore
Kabina	where the eagle stood
Kabinakagami	it is clean
Kabinakagamisis	it is small and clean
Kabiskamgami	it is clean
Kaboni	a stopping place
Kaboosa	to get on
Kagami	everlasting water
Kagawong	everlasting mist
Kaginagokog	everlasting wooded lake
Kaginot	everlasting
Kahshahpiwi	passing after big effort
Kaiashk	a gull
Kakabeka	steep rock
Kakagi, Kakise	a raven
Kamaniskeg	that which was islanded
Kaministog	island place
Kaministikwia	river where one finds islands
Kamiskotia	it was red
Kanuchian	a nice river
Kapik, Kapikog	passing by
Kapika	allows passage
Kapikik	passing by at night
Kapiskau, Kapiskong	where it diverges
Kapuskasing	place of branching
Kasagiminnis	island at river delta
Kashagwogmog, Kashagawigamog	shoal
Kaskego	lisping place
Kassagimini	narrow
Katagi, Kattawagami	old
Kawa	scarcely
Kawagama	scarcely a lake
Kawakamik (a)	scarcely a beaver pond
Kawapiti	cutting short thick wood
Keejask	a gull
Kenoje	a pike
Kenetagami, Kenogami	a lake with pointed end
Kenogaming	place with pointed end
Kenogamisis	a small lake with pointed end
Kinniwabi	rock of white war eagle
Kushog (ami)	hot water
Kwagama	stale water
Madawaska	bay at the junction
Manitoulin	place of the great spirit
Matachewan	the current is heard
Mattagami	stirred water
Mattawa, Mattawan Mattawasago	it makes a noise
Metagama	meeting of rivers
Michipicoten	big shattering
Miminiska	blueberries abound

Minaki	blueberry land
Minesing	place of islands
Minis, Ministik	island
Minnehaha	laughing water
Minnesabik	strong water
Minnesota	land of water
Michamattawa	loud noise
Michimokwa	large black bear
Mishionga	long portage
Missinabi	marked by a river
Missinaibi, Missisicabi	great river
Missisagi, Mississauga	great outlet
Mississippi	great river
Mistassin (i)	large stone
Moosonee (Moose nipi)	moose river
Muskoka	a belt
Muskwabik	red rock
Nagagami	gravel water
Nameigos (is)	trout
Napanee	flour
Napawin	place of sleep
Niagara	making noise
Nipigon	troubled river
Nipissing	at the small lake
Niskibi	goose stopping place
Nottawasaga	blocked junction
Nottaway	Iroquois (in Ojibway)
Nowashe	in a swamp
Obakami	water in a channel
Ochig	a fisher
Ogoki	joining to
Omemee	dove, passenger pigeon
Onaping	flat place
Ontario	great lake
Opasatika	dry place
Opechee	a thrush
Opinnagau	channel of islands
Oshawa	crossing
Otonabee	bruising river
Pashkokogan	a gun, rifle
Penetanguishene	place of sands
Petawawa	one can hear the waterfall this far
Pichogen	buffalo
Piskegomama	water of buffalo
Powassan	wind-blown
Pukutawagan	striking place
Saganaga	stretching out
Saganash	an Anglo-Saxon
Sagi	river mouth
Saginaw	at the river mouth
Saguenay	grand discharge (water)
Saugeen	those who live at a river mouth
Scugog	muddy
Sesegonaga, Sesekinaka	sudden
Shagokow	sheltering place
Shakwa	to scare
Shamattawa	main branch
Shawanaga	southern portage
Shebandowan	flowing through
Shebeshekong	flowing through grass
Shepastik	branch of a river cutting off and rejoining
Shingeris	a grebe
Shingwak	a pine
Temagami	deep lake
Temiskaming	place of deep water
Timmichee	flows deep
Toronto	meeting place
Waba	white
Wabanah	morning
Wabassi, Wabasso	swan
Wabi	he sees
Wabigoon	white snow or flower
Waboose, Wabus	snowshoe hare
Wabuno	dawn
Wakami	crooked creek
Wapamisk	white beaver
Wapesi	swan
Washagami	brilliant lake
Washago	brilliant water
Waubaushene	place of the hare
Wawa	eggs
Wawong	place of fog
Wenakoski	dirty
Wendego, Wendigo	devil — symbol of excess
Winnipeg	dirty water

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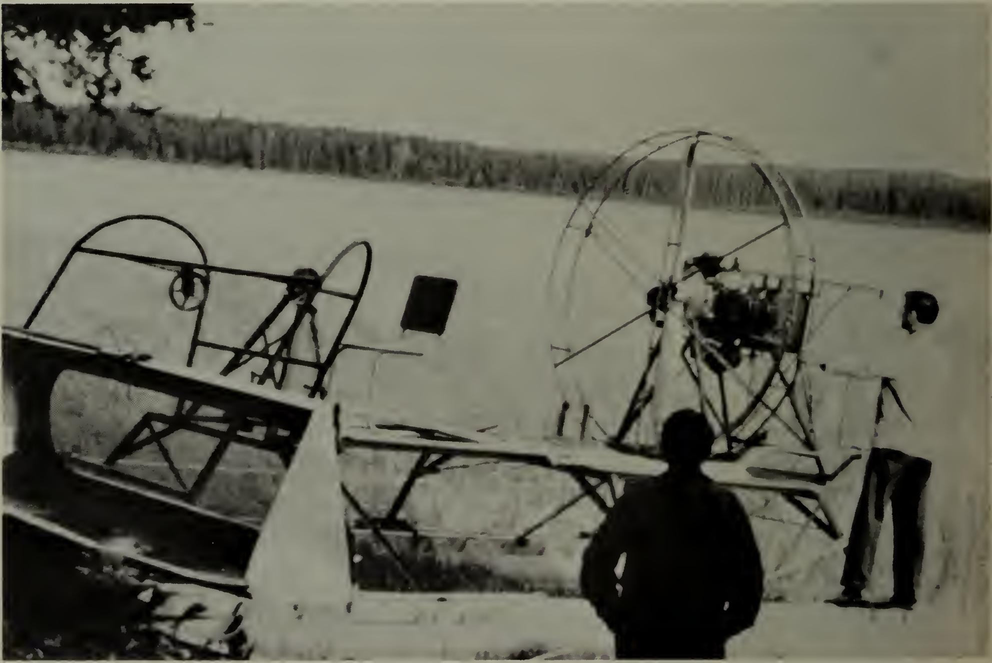
Peter Lee and Wayne Stack (rear), wildlife management officer, check rice growth.



A wild rice harvester.

A planting of wild rice.

THE INCREDIBLE POTENTIAL OF WILD RICE

Report and Photos by Peter Lee
Biologist, Northwestern Region

WILD rice, *Zizania aquatica L.*, is the only indigenous cereal of Canada and it grows wild throughout Ontario. Its largest concentrations are in northwestern Ontario and its northern limit is near North Spirit Lake (52°30′, 93°00′) which has a growing season of 150 days.

Zizania aquatica should not be confused with the rice we normally find on the supermarket shelf which includes the cultivated strains of *Oryza sativa* .The native species of the latter, which occur mainly in Asia but also in the southern United States, is sometimes called wild rice too — that is rice that grows wild, causing further confusion.

Wild rice is economically important to the native people in Ontario. In 1975, 90,000 pounds of wild rice were harvested for a green rice value of $54,000 or $0.60 per pound to the individual picker. The wholesale value of the processed rice is about $3 per pound and it retails as a gourmet item for $5 to $12 per pound. In the north especially, increased production would mean a substantial increase in the economic base of Ontario's native people.

Most areas of the province where wild rice grows in abundance are divided up and assigned to the Indian Bands for harvesting. In each locale the harvest is carefully controlled by a Band committee. Indians or non-Indians who wish to harvest wild rice must apply to the committee to have their names placed on the pickers' list.

Wild rice is also important as a wildlife food — although just how important no one really knows. Muskrats and moose, for example, find the shoots palatable. Some of the songbirds, especially red-winged blackbirds and sparrows, alight on the stems and feed directly on the grain. Migrating ducks, which arrive from the north after the grain has been shed, usually feed on the grains dropped on the lake bottom.

While it is claimed by some people that wildlife can damage the wild rice crop, it is likely that water-level fluctuations cause the greatest damage.

The traditional Indian method of harvesting the grain is accomplished by two people in a canoe. One person propels the canoe while the other draws the rice stalks over the side of the canoe with a stick and taps the ripe grains off into the bottom of the canoe with another stick. Care is taken not to damage the stalks so that one or two more harvests can be made as it ripens over a two-week period.

In recent years the wild rice industry has begun to expand but only five per cent of Ontario rice is harvested mechanically as yet. Processing is now done in a highly sophisticated plant capable of preparing thousands of pounds of rice daily.

The production of wild rice in Ontario has not been stabilized. For example, in 1973 over 1,000,000 pounds of rice were harvested, but in 1974 the harvest dropped to less than 30,000 pounds. The variability in the harvest is mainly a result of fluctuations in the water levels which are not controlled for wild rice production.

The United States has met the challenge of stabilizing production by introducing paddy culture and using commercially built harvesters.

If Ontario's wild rice industry is to be competitive, measures have to be taken to increase production. Therefore the Ministry of Natural Resources decided to examine the feasibility of expanding the range of wild rice in northwestern Ontario.

Since this area contains a vast number of lakes, it was decided to concentrate on the use of natural waters rather than on paddy culture. The development and management of these natural lakes are much less expensive than paddies, and, by using mechanical harvesters which travel on water, yields which are similar to those of the paddies can be obtained.

Though the number of suitable waters was unknown when the search began in July of 1974, preliminary investigations were very encouraging. It appeared that there might be thousands of acres of potential wild rice waters.

To test the lakes for their growing capability, trial plantings were conducted on a large number of waters with varying soil and water characteristics. These trial plantings gave us basic information on the growth requirements of wild rice.

Most of the waters were accessible only by air. The conventional methods of broadcasting seed from a boat or from the pontoons of a plane were impractical, so an aerial seeder was designed and built to fit through the drop-hatch of a turbo-beaver aircraft.

The best conditions for aerial seeding appeared to be at an altitude of 200 feet with an air speed of 100 mph. On windy days the drops were made at lower altitudes but never below 150 feet. Using the seeder, a 60-pound bag of wild rice could be dumped very quickly. The spread was approximately 465 feet long by 30 feet wide. The effectiveness of the seeder was clearly seen during winter plantings in 1975 and after the examination of the 1974 fall plantings.

The results of the plantings were encouraging. Nearly all introductions were successful, but it was apparent that some conditions were better than others for the growth of wild rice. Optimum conditions could be described as clear, non-turbid waters, 24 to 32 inches in depth, the absence of competing emergent and floating species, a soft alluvial bottom, and an area of at least 150 acres meeting these requirements.

Under such conditions, tillering, the production of many stalks from one seed, occurred. In some cases there were over ten stalks per seed. The importance of this tillering to increased yields is evident when it is considered that 500 instead of 50 grains are produced from one seed.

During the summer of 1975, surveys for potential rice lakes continued and plantings were conducted again.

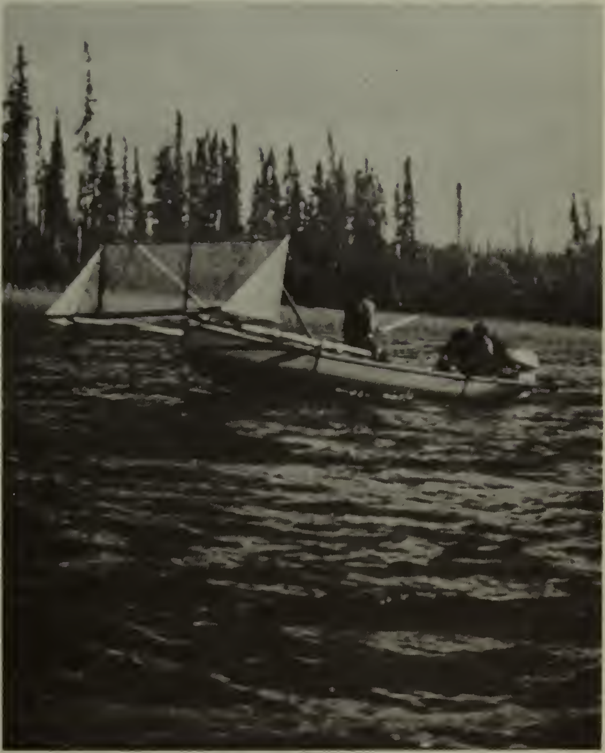
But much remains to be done. Recent crop failures have shown that we need to know much more before we can manage wild rice properly. The following questions need answers.

1. How can we predict the wild rice harvest in future years?
2. Can we use wild rice which is adapted to deeper water in areas where considerable water fluctuations occur?
3. Are water level control devices necessary? Are they feasible?
4. Can we obtain two crops of rice per year by planting rice that is adapted to shorter growing seasons?
5. Can we hybridize the two varieties of rice found in northwestern Ontario to obtain desirable characteristics of both?
6. What are the effects of harvesting methods on wildlife in the area?
7. What are the effects of wildlife on expanded crop production?
8. What are the effects of control practices for insect and fungal damage and competition from other aquatic plants?

It is not known if these investigations will be undertaken in the near future, but at least the incredible potential for a wild rice industry in the north has at last been demonstrated.

Aerial view of wild rice in lake.

Tillering from one stock of planted rice.



A mechanical rice picker used by Indians.